

**CLAIMS**

1. A method of storing context information in an outgoing message sent from a node using a protocol stack having at least one layer, comprising:
  - 5 selectively indicating to a layer of the protocol stack that context information should be obtained for that layer; obtaining context information in accordance with the indication; and adding the obtained context information to the outgoing message such that a response to the message contains the context information.
- 10 2. The method of claim 1, wherein the node is arranged in a high-availability configuration.
- 15 3. The method of claim 1 or 2, wherein the outgoing message is sent from the node to a remote node across a network.
4. The method of claims 1, 2 or 3, adapted for use with a message-based communications system.
- 20 5. The method of any preceding claim, wherein the step of obtaining context information is adapted for obtaining context information related to the outgoing message.
- 25 6. The method of any preceding claim, wherein the step of adding the obtained context information is adapted for appending the context information to a separate field of the message.
7. The method of any preceding claim, for use with a session initiation protocol (SIP) network.
- 30 8. The method of claim 7, wherein the step of adding the obtained context information is adapted for appending the context information to a SIP TAG field.

9. The method of claim 7, wherein the step of adding the obtained context information is adapted for appending the context information to a SIP extension header.
- 5    10. The method of any preceding claim, further comprising adding an indication associated with the obtained context data where it is determined that the context data may be inaccurate or incomplete.
- 10    11 A method of restoring the context information of a layer of a protocol stack of a node:  
comprising:  
receiving a message;  
determining whether the context information of the layer should be restored; and,  
where it is so determined,  
15    determining the presence of context information relevant to the layer within the message; and  
restoring the context of the layer using context information from the message.
- 20    12. The method of claim 11, wherein the step of determining is adapted for determining whether the context information of the layer should be restored based in part on the context information of the layer and in part on the received message.
- 25    13. The method of claim 11 or 12, wherein the step of determining further comprises checking the existence at the layer of context information associated with the received message.
- 30    14. The method of claim 11, 12 or 13, wherein the step of determining further comprises checking whether the received message is an initial message.
15. The method of any of claims 11 to 14, adapted for use with the session initiation protocol (SIP).
16. The method of claim 15, wherein the step of restoring the context of the layer is adapted for restoring the context using context information stored in a SIP TAG.

17. The method of claim 15, wherein the step of restoring the context of the layer is adapted for restoring the context using context information stored in a SIP extension header.

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18. A system for storing context information in an outgoing message sent from a node using a protocol stack having at least one layer, comprising:

means for indicating to a layer of the protocol stack that context information should be obtained for that layer;

10 a module for obtaining context information in accordance with the indication;

a circuit for adding the obtained context information to the outgoing message such that a response to the message contains the context information.

19. A system according to claim 18, wherein the node is arranged in a high-

15 availability configuration.

20. A system according to claim 18 or 19, wherein the outgoing message is sent from the node to a remote node across a network.

20 21. A system according claims 18, 19 or 20, for use with a message-based communications system.

22. A system according to any of claims 18 to 21, wherein the context information obtained is related to the outgoing message.

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23. A system according to any of claims 18 to 22, wherein the obtained context information is appended to a separate field of the message.

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24. A system according to any of claims 18 to 23, for use with a session initiation protocol (SIP).

25. A system according to claim 24, wherein the obtained context information is appended to a SIP TAG field.

26. A system according to claim 24, wherein the obtained context information is appended to a SIP extension header.

5       27. A system according of any of claims 18 to 26, wherein an indication associated with the obtained context data is added where it is determined that the context data may be inaccurate or incomplete.

10      28. A system of restoring the context information of a layer of a protocol stack of a node:  
comprising:  
receiving means for receiving a message;  
logic for determining whether the context information of the layer should be restored;  
a circuit for determining the presence of context information relevant to the layer within the message; and  
15     restoration means for restoring the context of the layer using context information from the message.

20      29. A system according to claim 28, wherein the logic for determining is adapted for determining based in part on the context information of the layer and in part on the received message.

25      30. A system according to claim 28 or 29, wherein the logic for determining is adapted for checking the existence at the layer of context information associated with the received message.

31. A system according to claim 30, wherein the logic for determining is adapted for checking whether the received message is an initial message.

30      32. A system according to any of claims 28 to 31, for use with the session initiation protocol (SIP).

33. A system according to claim 32, wherein the restoration means is adapted for restoring the context using context information stored in a SIP TAG.

34. A system according to claim 32, wherein the restoration means is adapted for restoring the context using context information stored in a SIP TAG.

35. A method of sending a message from a node through a hierarchical structure of  
5 one or more discreet layers comprising:

indicating to a layer that context information should be obtained for that layer;  
obtaining context information in accordance with the indication; and  
adding the obtained context information to the message, such that a response to the  
message contains the context information.

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36. A method of restoring the context information of a layer of a hierarchical structure  
of discreet layers comprising:

receiving a message;

determining whether the context information of the layer should be restored; and,  
15 where it is so determined,

determining the presence of context information relevant to the layer within the  
message; and

restoring the context of the layer using context information from the message.